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OPEN MEETING AGENDA ITEM

To: Commissioner Paul Newman, AZ Corporation Commission
CC: Nancy LaPlaca, Advisor to Commissioner Paul Newman, AZ Corporation Commission
From: Wayne Shirley Richard Sedano¹, Regulatory Assistance Project
Date: November 11, 2009
Re: Discussion on proposed changes to Arizona Resource Planning and Procurement Rules

The following discussion is in response to the request for feedback on Commissioner Paul Newman's revisions to the proposed Arizona Resource Planning and Procurement Rules. We have organized this discussion into three parts. The first section is a discussion of Commissioner Newman's proposed revisions. The second section addresses general provisions of the proposed rules. The third section provides some suggestions that the Commission may want to consider incorporating into the proposed rules.

Commissioner Newman's suggested changes to the rules

Monetizing certain externalities (R14-2-701(18) and R14-2-703(D) and in other definitions)

In the proposed rules, environmental externalities are required to be taken into consideration when comparing resource options; "environmental externalities" are defined as "currently uncounted costs including water use and water contamination; coal ash (bottom and fly) storage, monitoring and disposal; health effects from burning coal; and emissions from transportation and production of fuels. If an exact monetized value cannot be determined, a range of costs may be used."

We observe that places that account for non-electric externalities tend to have statutory support. We also observe that in all the categories in the recommendation, while the magnitude of the costs may be hard to calculate with any precision subject to (sometimes intense) debate, the value is positive and can be accounted for by the commission in case specific ways. RAP appreciates that the proposal here leaves the commission the flexibility to apply appropriate adjustments for the circumstances, but also requires the commission to address the issue as it arises.

Ten-year planning horizon (R14-2-703(C), (D), and (F))

In the proposed rule, planning horizons span between 10 and 15 years for load data and analyses under section 2-703(C), prospective analyses and plans under section 2-703(D), and for the resource plan in section 2-703(F).

We recommend a longer planning horizon of 20 years for these provisions, with a higher standard of detail projected over the first 10 years of the plan, and retention of the detailed 3-year action plan provided for in section 2-703(H). This tiered structure will ensure that vital longer-term risks and goals

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are incorporated into the planning process, perhaps organized as a manageable number of distinct scenarios, accompanied by more detailed planning for the near- and mid- term (up to ten years). A number of Western states have incorporated longer IRP planning horizons spanning between 20 and 40 years, including New Mexico, Colorado, and Oregon.

Sensitivity analysis (R14-2-701(42) and R14-2-703(E))

Sensitivity analysis is required in the proposed rules, and the analysis is required to include “a range of values for the discount rate, a range of values for environmental externalities, a range of values for future water costs, and a range of values for future fossil fuel costs.” Discount rates utilized are required to be described and documented in the plan. We generally find that the after tax weighted average cost of capital to the utility is valid for comparing resources from the utility perspective. The variables recommended for sensitivity analysis are typical although water costs are not typically considered in IRPs. Given Arizona’s needs, and concerns about water in the West generally, it is appropriate to include them and it is consistent with the externality section.

Please note the distinction between sensitivity analysis and scenario analysis. The former varies key assumptions in the analysis and is useful to identify critical assumptions or demonstrate potential problems or advantages for a particular scenario. The latter varies groups of assumptions to create consistent distinct scenarios. This might allow a scenario that envisions low carbon coal generation available within the planning horizon and another where this technology fails to make a difference.

Fuel supply studies (R14-2-703(B1h))

The proposed rules require submission for each generating unit and purchased power contract for the previous year, a fuel supply study for coal, natural gas, and uranium every five years, starting in 2010. We have no suggestion on this section but would note how important it remains for the utility to be accountable for fuel supply in the presence of a fuel adjustment clause.

Estimated and actual costs for fossil fuels (R14-2-703(B1i))

For each generating unit and purchased power contract for the previous year, estimated and actual costs for natural gas and coal for the past five years, and estimated costs for natural gas and coal for the next 30 years are required by the proposed rules. We have no suggested changes for this section.

Costs for pollution control chemicals (R14-2-703(B1m))

The proposed rules require, for each generating unit and purchased power contract for the previous year, a calculation of the costs for sorbents and other chemicals used in pollution control devices. We have no suggested changes for this section.

Coal ash requirements (R14-2-703(B1r))

The proposed rules require, for each generating unit and purchased power contract for the previous year, the estimated amount of coal ash produced, the location for the disposal of the ash, and a list of the governing regulations. The total cost of managing and disposing of ash should be included in the externalities costs of ash producing technologies, including potential legal liabilities. Ash can have considerable externalities in the form of environmental and health impacts and can have catastrophic release events as has been recently experienced elsewhere in the US.

Treatment of life-cycle costs and benefits (R14-2-703(D))

The proposed rules call for consideration of “environmental impact and life-cycle costs” as part of prospective analyses and plans under the IRP. Integrating life-cycle costs and benefits into the planning process is critical to ensuring that the full value of all resources, including transmission, demand-side resources, and renewable resources, is recognized. The proposed rules might be further strengthened by more clearly identifying the role of life-cycle costs and benefits in the planning process. For example, emphasize that the NPV of future resources be calculated over their entire useful life, taking into consideration the various circumstances that may emerge over that time period.

Based on IRPs of other states, some suggestions include:

- Requiring utilities’ plans to choose the plan with the lowest present value life cycle cost, including environmental and economic costs, through a strategy of combining investments and expenditures on energy supply, transmission and distribution capacity and efficiency, and on energy efficiency programs. (VT)
- Consider all costs with a reasonable likelihood of being included in rates over the long term, which extends beyond the planning horizon and the life of the resource. (OR)
- Requiring the utility to evaluate the cost of *each resource* through its projected life with a life-cycle or similar analysis. (NM)

Relationship of demand and changing climate (R14-2-703(E1a))

The proposed rules require utilities to file sensitivity or probabilistic analyses that incorporate demand forecasts, “including the effects of hotter temperatures and higher peak demands as projected by the latest government climate change research.” We support this addition; however, we recommend replacing “hotter temperatures” with “changing temperatures” or “a changing climate.” The latter is more comprehensive and would capture the effects of changes in water runoffs or other natural systems that affect the power system.

Other items addressed in the proposed rules

Carbon costs of resource options (R14-2-703(E1d))

The proposed rules direct utilities to file “the costs of compliance with existing and expected environmental regulations” as part of their sensitivity analysis. We agree with this language. We also recommend that a broad range of possible future regulatory scenarios be considered. As part of this process, RAP recommends the carbon content of each resource be calculated.

Diversity of contract length (R14-2-703(E2))

The proposed rules include a section asking utilities to identify options that will help them respond to risks. RAP recommends including in this section an option to consider contracts of short-, medium, and long-term lengths in order to better address risks.²

² Some of our previous work on portfolio management and risk management issues can be found on our website here: <http://www.raponline.org/Feature.asp?select=71>.

Definition of resource options (R14-2-703(F1) and R14-2-703(D))

The proposed rules direct utilities to compare a “wide range of supply- and demand-side options” in the resource plan. RAP recommends defining the “supply- and demand-side options” to be compared in the plan. The definition should include, but not be limited to: generation, transmission, distribution, and distributed energy; distributed energy should include, but not be limited to: energy efficiency, demand response, distributed generation, storage, improved system and operational efficiencies, etc. We further recommend the rules further incorporate mechanisms to ensure that energy efficiency is treated on equal footing with supply-side resources in meeting projected demand. LBNL has issued a report providing a number of recommendations on how this can be done. (Hopper, Nicole, et. al., Lawrence Berkeley National Laboratory, Energy Efficiency in Western Utility Resource Plans: Impacts on Regional Resource Assessment and Support for WGA Policies, August 2006). The commission should be satisfied that if plug in hybrid electric vehicles becomes a viable storage option that the IRP will address the impacts in a timely way.

Public participation (R14-2-703(G4))

The proposed rules require utilities to file work plans that outline the timing and extent of public participation and advisory group meetings the utility intends to hold before completing the plan.

Public participation in developing an IRP is very important. The public’s role is to ask questions, express priorities, and check the work of utilities. It is important for the utilities to accept inquiries and for the regulator to use public participation for the varied perspectives it inevitably delivers. Public processes are convenient places for the public to “look inside” the planning process, making the process more transparent. A public participation process is important whether or not Commission approval is required. The rule should articulate the expectation for public participation, which is helpful to all the parties.

There are two major times in the IRP process when public input is appropriate: 1) During the plan development; and 2) During the Commission acceptance process. States vary widely in their public participation models; some are very informal and collaborative, while others are formal and contested. Some are more prone to hearing only from insiders, typical parties to regulatory proceedings, while others can be more likely to hear from citizens with more casual interests.

The following table illustrates the ways in which various states incorporate public input into the IRP process:

Public participation during IRP processes among selected states, 2006	
During plan development	
Appointed advisory groups	Montana, Idaho, North Dakota
Utility-sponsored workshops	Utah, Oregon, Washington
Collaborative process	Minnesota
During Commission acceptance process	
Public comment period	Nevada, Montana, Idaho, Washington, California, Minnesota
Formal or informal hearings, generally without litigation	Montana, Idaho, Utah, Washington, Oregon, Minnesota
Litigated hearings	California, Nevada

Source: The Regulatory Assistance Project, Richard Sedano, "Integrated Resource Planning: Process and Rules in the West," 6/8/06.

On occasion, a state or utility may want a deeper public engagement than would be typically done. This might be in advance of a significant resource choice on the horizon or just to have a periodic focus on public involvement. Deliberative polling can be used in this situation. A deliberative poll recognizes that average people do not appreciate the dilemmas that utility and government decision-makers face, but it also posits that given some information and an opportunity to process that information and deliberate on its implications, citizens can reflect the challenge of the decision-maker in rendering opinions on key resource decisions. Deliberative polling is credited for creating a positive environment for renewable energy in Texas in the late 1990s. Ron Lehr, a former commissioner who may be known to you is an expert in this.³

Commission review of resource plans (R14-2-704(B))

The proposed rules require that by July 1 of each odd-numbered year, the Commission "shall determine whether to issue an order acknowledging the resource plans." Further, "the Commission shall order an acknowledgement of the resource plan if the Commission determines that the resource plan complies with the requirements of the Article and that the load-serving entity's resource plan is reasonable and in the public interest," taking into consideration ten factors. The rules also state that "no particular ratemaking treatment shall be implied nor inferred by the Commission's acknowledgement" of a plan, but the Commission shall consider the utilities' resource plan filings during rate cases and other proceedings.

There are two basic approaches of Commission review of resource plans: acknowledging the plans or approving the plans. With acknowledgement, the Commission may choose to reject portions of the plan, identify concerns to be addressed by the utility, or comment on the plan. Enforcement is typically

³ For more information on public engagement and deliberative polling as applied in Vermont in 2007, see [http://www.raonline.org/docs/RaabAssociatesLtd Raab PublicEngagementOnVTElectricityFuture 2008 06-16.pdf](http://www.raonline.org/docs/RaabAssociatesLtd%20Raab%20PublicEngagementOnVTElectricityFuture%202008%2006-16.pdf)

done in rate cases. The following states use acknowledgement of resource plans (as of 2006): Idaho, Montana, Oregon, Utah, Washington and Wyoming. With approval, plans are approved in whole or in part, and some portions may be rejected. Approval may be of the resource plan itself (California, Colorado) or the action plan (Nevada). Utility actions may be monitored via periodic status reports; the ultimate enforcement occurs in rate cases.

If acknowledgement, rather than approval, is the objective, it is important that the plan be robust, and that any plan that is insufficiently robust be returned for compliance.

Length of time by which Commission must review resource plans (R14-2-704(A and B))

Under the proposed rules, Commission staff must file a report analyzing the utilities' filings one year after the materials have been submitted, and the Commission must determine whether to issue an order acknowledging the plans 1 ¼ years after the plans have been submitted. We believe this timeframe for review is too long. The information in the submissions becomes outdated, and the process drags on. RAP recommends the Commission issue an order acknowledging the plans within six months (or less) of the utilities' submission of materials. If a plan does not comply with the requirements of the Rules, it should be returned to the utility for improvement within two months of its submission, with clear guidance on further steps for resubmission and review. Having significant public input into the development of the plan can help alleviate the need for lengthy discovery and litigation over the plan, making a shorter timeline more achievable.

Monitoring Compliance with Resource Plans (R14-2-704)

The proposed rule exercises due caution in balancing the role of the IRP in informing a LSE's planning process, and subsequent treatment of a LSE's resource proposals by the Commission. Where the Commission has issued an order acknowledging a resource plan, no particular ratemaking treatment is implied nor inferred by the Commission's acknowledgment. The IRP process could, however, be strengthened by requiring a LSE to notify the Commission of any significant deviations from its plan. While under the proposed rules a LSE may file an amendment to an acknowledged plan to reflect a material change to that plan, this provision could be strengthened.

New Mexico, for example, monitors utilities' compliance with their IRPs in two ways. First, a utility must notify the Commission of "material events that would have the effect of changing the results the utility's IRP had those events been recognized when the IRP was developed." The utility is required to explain how these events have changed the plan (NMAC 17.7.3.10). Second, when a utility submits a request for a new utility resource, it must present evidence that the resource is consistent with its accepted IRP, or provide an explanation for its deviation from the plan, as explained above (NMAC 17.7.3.12(B)).

We recommend that the Commission consider adding a mandatory reporting requirement to its IRP, which would be triggered by significant deviations from a LSE's latest approved resource plan.

Items not addressed in the proposed rules

Cost-effectiveness tests

The proposed rules do not require utilities to use a particular cost-effectiveness test to determine which EE programs should be implemented. The cost-effectiveness test should reflect the policy decisions in the rule and prior commission decisions. So avoided costs should be consistent with discount rate and

externality assumptions. The total resource cost test is a good test to use because it covers the customer costs and benefits that are part of the demand resources included in the plan. The utility cost test is also a good test to use because it creates a clear comparison of the effects of different resources plans as they will eventually be reflected in rates. The rule could direct that one or both of these tests be used for these reasons.. Many states require the utility to apply multiple tests for information purposes, but to use either the UCT or TRC test as the *primary screening test for resource selection*. Best practices avoid the use of the RIM test for screening but allow its use for purposes of identifying rate impacts that may need rate impact mitigation.

Geo-targeting of EE based on transmission and distribution constraints

Vermont and California target some energy efficiency investments to geographical areas that have transmission and distribution constraints. This reflects that some places have higher avoided costs, and would tend to have the effect of valuing distributed resources deployed in these places. The commission could probably adapt the rules to require this in the future by reinterpreting avoided cost, and some experience at doing basic IRPs may be desirable before requiring this level of detail.. We did some work on this a decade or so ago, which you may find helpful. Specifically, see the Distributed Resource Policy Series and related work, including *Distribution System Cost Methodologies for Distributed Generation* and *Profits and Progress Through Distributed Resources*.

Relationship of IRP to regional/sub-regional planning

The Western Interconnection has an evolving transmission planning process that can and probably will impact individual utility IRPs and *vice versa*. The IRP should probably address the current status of regional and sub-regional planning efforts, any “plans” the utility has proposed to such groups and the impacts of those planning processes on the utilities own IRP options and plans. Any apparent inconsistencies should be explained or resolved.

Connection of resource plans with Renewable Energy Standard

We recommend the resource plans explain the way in which the selected portfolio meets Arizona’s Renewable Energy Standard. Plans which do not meet the legal requirements for renewables should require explicit explanation for the cause of such failure and the course of action expected to cure the failure.

Planning to a Carbon Constraint

Given an expectation of imminent carbon regulation, the commission should consider a requirement to include plans for meeting a hard carbon constraint in the future. This is different than quantifying the current cost of carbon. Rather, it is constraining the available resource choices to those that actually meet carbon reduction targets -- perhaps with milestones at 2020, 2030 and 2050. Even if the utility is not currently subject to such constraints, now is a good time to put the planning mechanisms in place and to establish a good working knowledge of how to plan in this manner.

Format and structure of rules

The central focus of the IRP is set forth in section 2-703(F), which requires LSEs to develop a resource plan that “selects a portfolio of resources based upon comprehensive consideration of a wide range of supply- and demand- side options,” and which is reliable, minimizes adverse environmental impacts,

manages uncertainty and risk, and achieves a reasonable long-term total cost. In support of this plan, the proposed rule calls on LSEs to prepare a number of detailed reports and analyses. These requirements are set forth in section 2-703 (A)-(E), and include reporting of demand- and supply- side data; load data and analyses; prospective analyses and plans; and consideration of errors, risk and uncertainties. One difficulty, discussed above, is determining how LSEs should compare the "wide range of supply- and demand- side options" in the plan. Another is providing a clear roadmap for LSEs to follow in developing their plans.

We recommend that the plan provide a clearer guide to LSEs on what to include in their plan and how to balance various resources including supply- and demand- side resources, and transmission and distribution. One suggestion would be to lead into the plan with a clear definition of resource planning. This is the approach taken by Vermont (30 V.S.A. section 218(c)), which provides a detailed definition of "least cost integrated planning" to guide utilities.

Another suggestion would be to clearly list, upfront, the factors that are to be considered in development of resource portfolios. This is the approach taken by New Mexico (NMAC 17.7.3.9(G)). New Mexico's rule requires utilities to evaluate the cost of each resource through its projected life with a life-cycle or similar analysis. Utilities are required to discuss how the following factors were considered in, or affected, the development of resource portfolios:

- (a) load management and energy efficiency requirements;
- (b) renewable energy portfolio requirements;
- (c) existing and anticipated environmental laws and regulations, and, if determined by the commission, the standardized cost of carbon emissions;
- (d) transmission constraints; and
- (e) system reliability and planning reserve margin requirements.

We recommend that the Commission consider the structure of the rules, taking into account the illustrations above, in order to more clearly support the goals set forth in section 2-703(F).